



PAYSYS **REPORT**

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In this issue:

1. POS terminals in Europe: A closer look

Contents

1. POS terminals in Europe: A closer look

It is not easy to find and interpret the publicly available data for the POS terminals business in each EU-country. But it is worthwhile to take a closer look. The results show a significantly growing but rather heterogeneous market in the EU. Several factors could be the drivers of growth: national regulation (Greece, Italy and Hungary), the demand for card-present transactions and the Interchange Fee Regulation (2015).

Appendix: Cross-Border Acquiring in Europe

POS terminals in Europe: A closer look

(hg) For card payments, the POS payment terminal in a brick-and-mortar environment is - at least in Europe - the most relevant point of interaction. In 2018, 83% of total card sales volume (EU) is still generated by card-present transactions (plastic cards or digital cards stored in mobile wallets). But the development of the number of installed terminals is very heterogeneous within the EU member states. The data can be used to tackle a number of interesting questions. To what extent does population density play a role? Where is the saturation limit and thus the remaining sales potential? What influence did national legislation have on terminalisation in some countries?

There are several studies on the European terminal market. These studies are usually based on the terminal data of the national central banks, which is collected by the ECB and shown in its comparative tables. However, these ECB statistics are misinterpreted in many superficial analyses and thus leads to wrong conclusions.

It is therefore worth taking a closer look at this hardware market of a total of 14.5 million terminals (2018)

Our Comment:

This analysis has been prompted by a recent publication of a well-known UK research company specialised in the card market. In an analysis of the European acquiring market it was claimed that the number of POS terminals in **Germany** in 2018 was down 2.28% on 2017. A statement of this kind for the rapidly growing German card market must make one's ears prick up. The source for the German and all other country-specific terminal figures was relatively easy to find: ECB Payment Statistics. Well, there is nothing to be said against copy & paste of ECB figures and their commercial use. But you have to copy the correct figures.

This is admittedly not an easy undertaking. Are you looking for the number of POS terminals installed in each Member State? We are happy to help you find the "right" data, provided of course that the ECB data is correct. The regular reader of this report knows that we are sceptical about the quality of the card payment figures of some countries, but unfortunately there are no better figures.

First of all, when looking for per-country terminal figures you should not use the "comparative tables" of the ECB statistics, as most market analysts do. In

Table 11.1 (ECB Payment statistics) you can see the terminal numbers for all 28 EU countries for the period 2014-2018 clearly arranged next to each other, but these are **not** the terminals installed in the respective country.

The table shows per country only the total number of terminals reported by the respective PSP (acquirer) located in that country. The number includes not only the terminals in that country but also the terminals abroad of foreign merchants that have an acceptance contract with that domestic acquirer. Some acquirers do not choose their headquarters for their market activities in the specific country, but according to other criteria (taxes, regulatory arbitrage, etc.).

An extreme example is **Luxembourg**. Several acquirers are based there. The "comparative table" reports 138,200 terminals for Luxembourg - quite extraordinary for a country with a population of 600,000 inhabitants. The number and growth rates in this table therefore only say something about the business of the acquirers based in the respective countries and nothing about the terminal situation in the country itself.

A second reason to avoid this comparative table is the fact that all types of POS terminals are listed here. The ECB distinguishes between three types of terminals:

- EFTPOS terminals,
- E-money card terminals (with a further subdivision into loading/unloading terminals and accepting terminals),
- Imprinter for the data-capture of embossed cards (the card veterans will remember these devices).

This classification is totally outdated and clearly causes great confusion among PSPs who have to report this data.

The separate recording dates back to the time when e-money existed in the form of "e-purses". Such chip cards with stored value units could be loaded or unloaded at special terminals if necessary. There were also separate terminals where only this card could be used. All EU countries (except Germany where the e-purse "GeldKarte" is suffering but still alive) have terminated these - not very successful - products. The current e-money prepaid cards (e.g. prepaid Mastercard) can be used at all EFTPOS terminals.

The EFTPOS terminals (electronic data capturing of card data) are therefore the relevant category. For most countries the number of EFTPOS terminals is

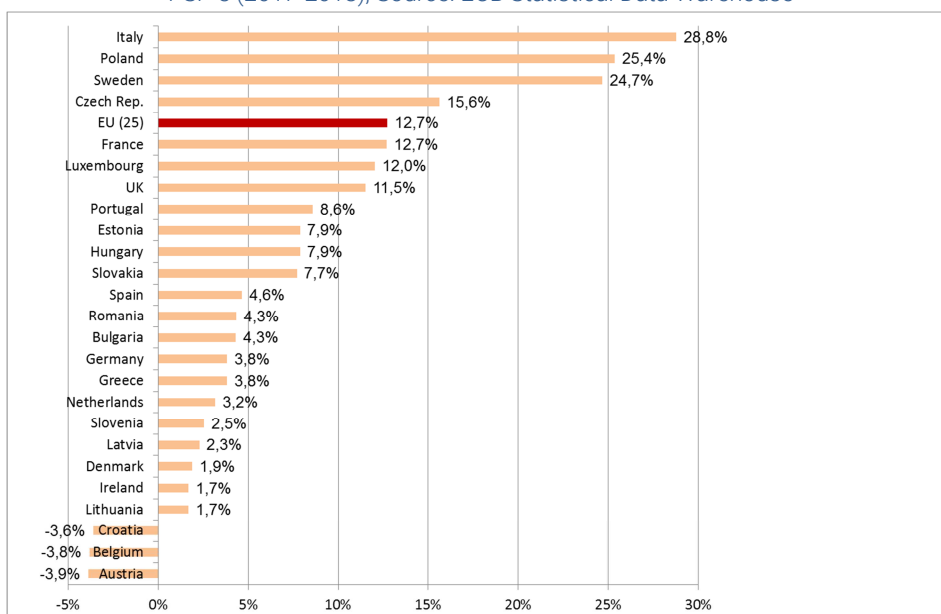
identical to the total number of terminals. The other terminal-related lines in the ECB statistics simply remain empty due to lack of relevance.

The terminals that only accept the GeldKarte in Germany (declining, but still 359,300 units), e.g. at cigarette vending machines, are included in the total number of POS terminals. As these, mostly inactive terminals are being dismantled, the total number of terminals declined in 2018. However, looking at the EFTPOS terminals, there is clearly growth in Germany. See also the box "POS terminals in Germany".

So if you are looking for the number of EFTPOS terminals, you have no choice but to look at the ECB statistics for each country. Unfortunately there is no "comparative table" here. Per country you will find the terminals provided by the PSPs located there. There you will find a subdivision according to terminals "located in the reporting country" and "located abroad". Having collected these data, you have reached a first milestone, because you have the number of terminals in the respective country, provided by **resident** PSPs.

However, you are still lacking data on the terminals provided by **foreign** PSPs. Although cross-border acquiring takes place primarily in the card-not-present area, there are now a number of acquirers who operate across borders in the brick-and-mortar card busi-

Fig. 1: Growth rate of the number of EFTPOS-terminals located in the country and provided by resident and non-resident PSP's (2017-2018); Source: ECB Statistical Data Warehouse



ness. It is not easy to tickle these data out of the ECB database. You have to go deep in order to find it. Once you have added the number of terminals of foreign PSPs you have reached your goal: the number of EFT-POS terminals in the respective country provided by domestic and foreign PSPs.¹

For reasons of space, we can only present some results here. However, we will be happy to send you (free of charge) the complete "correct" comparative table on request (mail to paysys-report@paysys.de).

In almost all EU member states there was an increase in the number of POS terminals in 2018 compared to the previous year. See Fig. 1, the average growth in the EU-25 (excluding Malta, Cyprus and Finland²) was 12.8%.

National regulation as growth driver

The front runner is **Italy**. The high growth is mainly due to national legislation. A 2012 law requires all B2C enterprises to accept at least debit cards. In addition to traditional retailers, craftsmen and professional services firms have also had to accept debit cards for payment. This led in particular to an increase in mPOS

(mobile terminals). Many banks offer a business account including mPOS as a package for this target group. *"However a number of new POS terminals are inactive as there is no penalty for not complying. A recent regulatory measure proposed to introduce penalties for merchants that do not accept cards from July 1st 2020, but it was amended just before going into effect"*, according to Marco Fava, payment expert and managing director of the consultancy CleverAdvice.

The numbers confirm his statement. Compared to 2014, card transactions per terminal per year have fallen by 16% from around 1,300 to 1,100 (2018). As a result of these regulatory measures, Italy ranks first in Europe in terms of the number of terminals per 1 m Inhabitants (see Fig. 2).

Italy shares this top position with **Greece**, which has almost 53,000 terminals per million inhabitants. Here, too, we see the impact of national legislation. In December 2016 the Greek government enacted the Law 4446 on Electronic Transactions. With the new law, the government pushed card-based payments in the Greek economy through a twofold approach: The obligation of card acceptance at the POS by merchants and the punishment of cash usage by con-

POS terminals in Germany

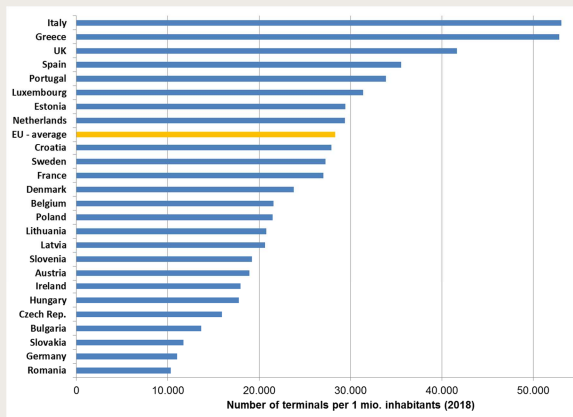
According to the ECB Payment statistics for Germany the total POS terminals is 1,179,321 (years end 2018). The year before the total was 1,206,830. According to these figures the decline was actually 2.28%. However, these figures are related to all POS terminals (still including about 359,300 terminals which can only be used by the e-purse "GeldKarte") provided by resident PSPs in Germany and outside Germany as well. If you take the terminals accepting debit and credit cards ("EFTPOS terminals") the number is 840,021 (2017: 816,200; growth rate: 2.9%). As a rule, the individual acquirers report this data.

However, the German central bank (Bundesbank) makes an exception here. The data comes from the domestic card scheme "girocard" and refers to the number of active girocard accepting terminals at the respective year-end. The terminals are mainly located in Germany (only a few terminals are located in Austria or in other "hotspots" of German tourists). Here, the terminals that only accept the cards of the ICS (International Card Schemes) and the "girocard" terminals that were inactive on the reporting date are missing. This number is unfortunately unknown. According to the statistics 129,208 (15%!) of the 840,021 girocard terminals are installed abroad. This is completely unrealistic.

Where does this number come from? It is the terminals of merchants abroad who have a contract with German acquirers (cross-border acquiring), reported to the Bundesbank. These terminals may not be subtracted, but must be **added** together. The total number of terminals provided by resident acquirers is therefore 969,228, of which 129,208 are abroad. This error will probably be corrected by the Bundesbank in the near future. The 840,021 domestic girocard terminals must now be added to the terminals provided to foreign acquirers in Germany. This figure amounts (according to the ECB statistics) to 75,561 (mainly provided by acquirers based in Luxembourg. See Appendix). The total number of EFTPOS terminals located in Germany (by resident and non-resident acquirer) will therefore be 915,582 at the end of 2018. As explained above, the real number will be higher. If the same method is used to calculate the number for 2017, the growth is 3.8% (instead of minus 2.28%)

sumers by removal of existing tax exemptions. We reported on this in detail in the PaySys Report of July 2017³. Compared to December 2014, the number of POS terminals in Greece catapulted by 190% from 195,000 to 565,000 (12/2018). The number of card-present transactions at these terminals grew in the same period much faster at 745% (2014: 92 m; 2018: 775 m transactions).

Fig. 2: Number of EFTPOS-terminals (located in the country) per 1 m inhabitants (2018)
Source: ECB Statistical Data Warehouse



Regulatory measures were also taken in **Hungary** to incentivise electronic tills to combat the black economy. The government made the use of tills connected directly to the tax office mandatory for a number of businesses since 2016. The scope of business will be extended in more steps from July 2020 and January

2021. As a side effect the acceptance of cards at these tills grew too, although card acceptance was not mandatory. The number of POS terminals jumped by 20% in 2017. The total effect of these regulatory measures was still small in Hungary at the end of 2018 (see Fig. 2). The number of terminals per inhabitant is still below average, but is expected to increase.

Demand for card-present transactions as growth driver

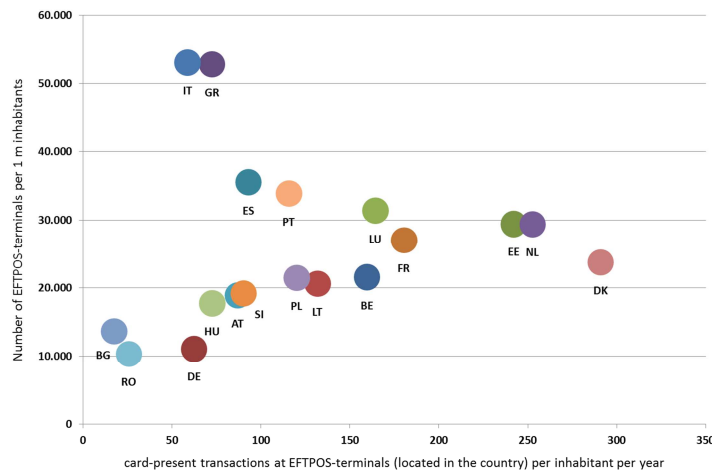
The evaluation of the relative density of terminals in the individual countries in relation to the number of domestic card-present transactions per inhabitant⁴ shows a clear correlation (see Fig. 3).⁵ Due to the obligation of card acceptance for many retailers in Greece and Italy, these countries fall out of line.

The question whether an increase in terminals leads to more card transactions or vice versa whether the demand for card transactions leads to a higher terminal density is difficult to answer. A typical hen-and-egg question. In any case, there is a correlation.

Some observations:

- The terminal business in the EU still offers considerable potential. An indicator of market saturation is probably around 30,000 terminals per 1 m. inhabitants.
- Compared to countries with a similar number of transactions per inhabitant, Spain and Portugal have a much higher terminal density. Poland and Portugal record more or less the same number of

Fig. 3: card-present transactions in relation to terminal density.
Source: ECB Statistical Data Warehouse



transactions per inhabitant (PL: 120; PT: 116). Nevertheless, Portugal needs about 60% more terminals per 1m of population. A plausible explanation would be the population density. However, Poland is only slightly more densely populated than Portugal (PL: 124; PT: 113 per sq. km).

- A different phenomenon is shown by the comparison between Estonia and the Netherlands. The terminal density and the number of transactions per inhabitant are almost identical. However, there is a huge difference in population density. Per sq. km, there are almost 17 times more people live in the Netherlands than in Estonia.
- Both examples show that, contrary to expectations, population density clearly plays a minor role in POS terminal density.
- The best-in-class Denmark is interesting: most card-present transactions per inhabitant (291) with a relatively low terminal density (23,781 per 1 m inhabitants). In contrast to all other EU countries, market saturation is evident here in terms of the number of terminals. Since 2012 the number of terminals has hardly changed (approx. 135,000). With more than 12,000 transactions per terminal p.a., the Danish terminals are the busiest. The worst performance is Italy with only 1,100 transactions as the EU-average is 3,870.⁶

These are some initial conclusions based on an analysis of the EU statistics. There are certainly other influencing factors that need further research, such as the willingness of local consumers to use cards also for low-value payments, the different extension of contactless payments per country, the use of cards at unattended vending machines, etc.

Interchange Fee Regulation (IFR) as growth driver

In the last PaySys reports we have dealt in detail with the two studies published this year on the impact of IFR (Edgar Dunn & Company and Ernst & Young/Copenhagen Economics). In its report⁷ published on 29 June, the European Commission only adopts the results of the EY/CE study it commissioned. Unfortunately, the two analyses (EDC and EY/CE) sometimes show completely different and contradictory results.

But at least they agree on one point: the IFR had no or

very little influence on the increase in card acceptance measured by the number of acceptance points and POS terminals.

EDC: *"It was expected that lower interchange fees, and thus costs to merchants, would see an increase in acceptance and usage of cards. The Study found that growth in acceptance for MasterCard and Visa has been the lowest of all international card brands with growth in acceptance of less than 1%."*⁸

EY/CE: *"We find evidence of increased acceptance since 2015, both in terms of the number of merchant outlets accepting cards and in terms of the number of POS terminals. However, the results provide no evidence showing that acceptance has increased more after 2015 than it did before 2015. Hence, it is not possible to judge whether the observed increase in acceptance is due to the IFR or to other factors."*⁹

The Commission is a little bolder and writes in its report: *"Growth in domestic and cross-border card transactions is partly due to the implementation of the IFR, as they reflect higher acceptance of cards by merchants, driven in part by lower interchange fees."* (p. 3) (underlined by the author)

Market saturation is probably around 30,000 terminals per 1 m. inhabitants.

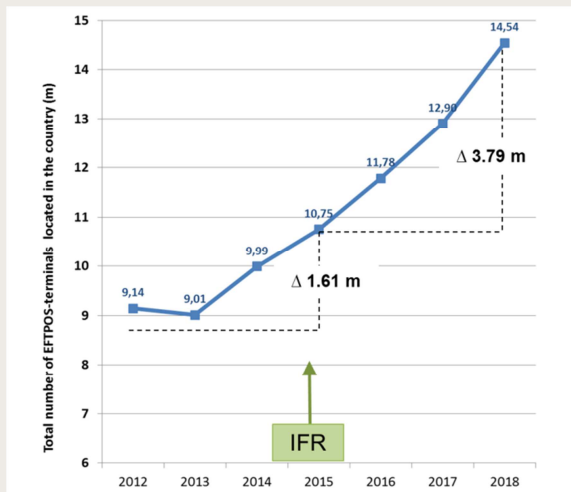
EY/CE refers to the medium-term terminal figures, but only publishes ECB figures from 2014 onwards (p. 272). The statement that growth in the multi-year period after 2015 (post-IFR) is not higher than in the period before that (pre-IFR) is not substantiated by the figures in the study.

However, terminal data in the EU before 2014 are

available in the ECB's data warehouse. For this period of time no pull-ups are necessary to calculate the number of terminals installed in the country. "The data cover terminals located in the reporting country irrespective of whether or not the provider is resident in the country", ECB stated in its methodological notes to the payment statistics (p. 3). In the past, the ECB statistics were highly user-friendly! Even in statistics, not every progress is an improvement.

Looking at the data (Fig. 4), it is noticeable that there was a slight dip in 2013. This result is caused by a decrease in several countries. There are no economic reasons for this. It is possible that the statistical data collection methods have been changed. Whether this statistical dip reflects reality or not, in the three-year pre-IFR period (2012-2015) the number of terminals in the EU increased by about 1.6 million. In the post-IFR period the growth was more than twice as high (+ 3.8m).

Fig. 4: EFTPOS-terminals in the EU (excl. Malta, Cyprus, Finland¹⁰) Source: ECB Statistical Data Warehouse



Part of the growth in the post-IFR period is due to national regulation in Greece and Italy, as discussed before. If we exclude these countries statistically, the increase in terminals in the pre-IFR period was + 1.24 m, whereas in the post-IFR period it was + 2.23 m.

On the basis of the statistical data we cannot agree

with the conclusion of the EY/CE study. The absolute increase in the post-IFR period is definitely higher than in the pre-IFR period. The explanation is certainly multi-causal. But the evidence strongly suggests that the IFR has also contributed to this development. The Commission was right that its final report did not rely on the results of the EY/CE study on this point.



A tasty way to resolve the hen-egg issue...

Last but not least: the virus

In contrast to many current payment reports we try to avoid the C-word. Nevertheless, the virus could have considerable consequences for the terminal business.

We would not be surprised if the European Commission, as a result of the Corona crisis, comes up with a new regulatory initiative soon: For hygienic and pandemic reasons, brick-and-mortar merchants above a certain size will be obliged to accept cashless means of payment. It should be possible for everyone to pay only by card (plastic or e-wallet).

The Commission would thus follow the pioneers Italy, Greece and Hungary, which have resorted to this measure for tax evasion reasons. However, with the pandemic as a reason, this compulsion can be conveyed much more easily, even if no one has yet been infected by the handling of banknotes and coins. This would mean that the difficult hen-and-egg issue would simply be resolved by regulation. More terminals lead to more card payments!

Appendix: Cross-Border Acquiring in Europe

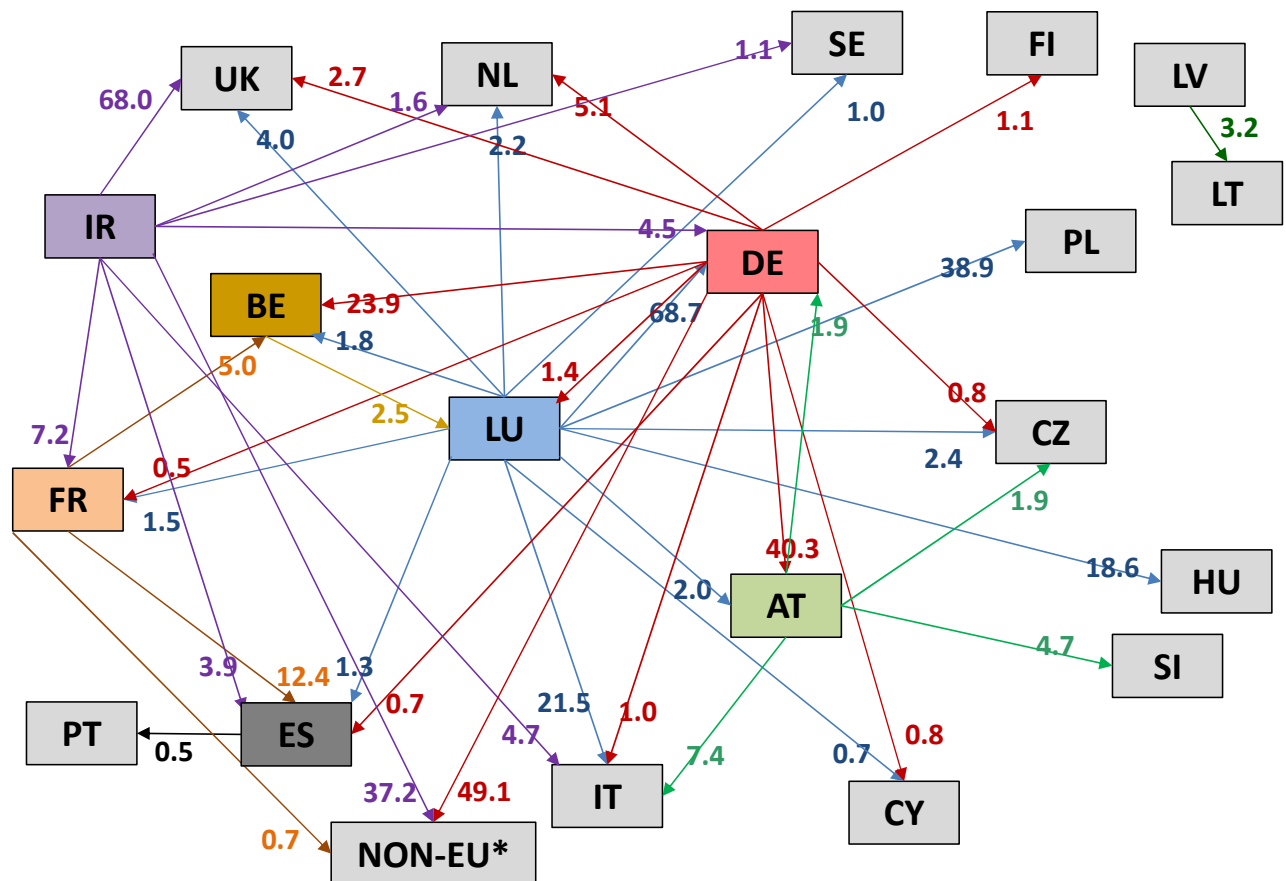
On the one hand, due to the ECB methodology of terminal data collection by location of the respective PSP, the search for the number of terminals per country is a laborious task. On the other hand, the statistics offer interesting results regarding the cross-border (XB) activities of acquirers in the field of card transactions at brick-and-mortar terminals. In the card-not-

present acquiring business (ecommerce) XB acquiring is relatively widespread, especially in the case of cross-border Internet shops and platforms. The location of the acquirer is not really important. But in brick-and-mortar business, the acquirer or a service provider commissioned by the acquirer must be physically present, especially if the acquirer also supplies or rent POS terminals.

Although data from several countries are missing due to the lack of reporting requirements (e.g. UK), XB activities (brick-and-mortar acquiring only!) show interesting results (see Fig. 5):

- Of the total of 14.5 million POS terminals installed within the EU 2.6% (380,150) have been provided by foreign PSPs. This is a lower limit, as there are no figures for internationally active acquirers based in the UK in particular.
- Acquirers, which are subject to reporting requirements in **Luxembourg**, develop most XB activities. There are many approved acquirers, but only a few in the physical acquiring business. The most important player is Six Payment Services (Europe), which operates the acquiring business with the support of branches in Italy, Czech Republic, Hungary, Poland, Germany, Austria and Slovakia, among others. In total, the Luxembourg acquirers reports 166,627 terminals outside the country.
- In addition to Luxembourg, acquirers from **Ireland** and **Germany** are particularly active across borders, such as Elavon, Concardis (Nets) and Payone (Ingenico). After Luxembourg, acquirers from Ireland “export” the highest number of XB terminals (80,380). The German acquirers concentrate their international business particularly on the neighbouring countries of Austria, Belgium and Switzerland.
- It is noticeable that in some countries with a relatively high volume of card-present transactions, the business of non-resident acquirers is minimal, such as in the **Netherlands** and **France**. It confirms the statements from acquirers that market entry in these countries is still very difficult due to national market closure.

Fig. 5: Number (000) of EFTPOS-terminals provided by non-resident PSP within the EU (2018); No graphical display if the number of terminals is less than 500; the graph is incomplete due to lack of reporting requirements in some countries.
 * Non-EU: probably primarily Switzerland). Source: ECB Statistical Data Warehouse



Notes

- 1 The data is based on the mandatory data input of the respective acquirers. As a rule, a card-accepting merchant has concluded a contract with a single acquirer for all cards (with the exception of cards in the 3-party schemes). However, there are merchants who work with several acquirers. In these cases, unfortunately unavoidable double counting in the ECB database occurs.
- 2 For these countries data are missing or the existing data are not plausible.
- 3 PaySys-Report No. 3-4 (2017). For free download see <https://paysys.de/paysys-report/>
- 4 The coefficient "number of domestic card-present transactions per inhabitant" also includes transactions generated by foreign cardholders. If only the transactions of domestic cards were taken into account, the tourism effect would be neglected.
- 5 The Member States Ireland, Cyprus, Lithuania, Malta, Slovakia, Finland, Czech Republic, Croatia, Sweden and UK are not taken into account, as either no (plausible) terminal data and/or no data on card-present transactions are available on the acquiring side.
- 6 The average refers to the EU countries that deliver both terminal and card-present transactions on the acquiring side. See Fig. 3.
- 7 Report on the application of the Regulation (EU) 2015/751 on interchange fees for card-based payment transactions (SWD (2020) 118 final
- 8 Edgar, Dunn & Company, Interchange Fee Regulation Impact Assessment Study, January 2020, p. 2.
- 9 Ernst & Young/Copenhagen Economics, Study on the application of the Interchange Fee Regulation, March 2020, p. 159.
- 10 For these three countries data is missing or the data is not plausible. For the period 2012-2013, only two places in the ECB statistics are missing for the other countries. This data has been estimated: Belgium (2013): 167,509; Croatia (2012): 90,000).

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